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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,089	08/07/2002	Laurent Joret	21992US2PCT	7122

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ALEXANDRIA, VA 22314

EXAMINER

BOSS, WENDY L

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 02/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/088,089	Applicant(s) JORET ET AL.	
	Examiner Wendy Boss	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-37 and 39-44 is/are rejected.
- 7) ☒ Claim(s) 38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 30 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 30 is not in proper dependent form, since it does not require all of the limitations of the parent claim.

Claim Rejections - 35 USC § 112

2. Claims 24, 26-31, 33 and 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd.

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App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 24 recites the broad recitation "between 1.85 and 2.15", and the claim also recites "between 1.90 and 2.10" which is the narrower statement of the range/limitation. Claim 26 recites the broad recitation "between 10 and 30 nm", and the claim also recites "between 15 and 25 nm" which is the narrower statement of the range/limitation. Claim 27 recites the broad recitation "between 10 and 35 nm", and the claim also recites "less than or equal to 30 nm" which is the narrower statement of the range/limitation. Claim 28 recites the broad recitation "less than or equal to 120 nm", and the claim also recites "especially at least 75 nm" which is the narrower statement of the range/limitation. Claim 29 recites the broad recitation "greater than or equal to 80 nm", and the claim also recites "especially less than or equal to 120 nm" which is the narrower statement of the range/limitation. Claim 30 recites the broad recitation "between 50 and 140 nm", and the claim also recites "between 85 and 120 nm" which is the narrower statement of the range/limitation. Claim 42 recites the broad recitation "less than 1.60 or 1.50", and the claim also recites "especially about 1.35-1.48" which is the narrower statement of the range/limitation.

4. Regarding claim 33, the use of "especially" renders the claim indefinite because it is unclear whether the limitation(s) following the word are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 23-35 and 39-44 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 97/43224 (Boire et al.).

Boire discloses a transparent substrate comprising on at least one face of the substrate, an antireflection coating, made of a stack of thin layers of dielectric material having alternately high and low refractive indices (see English abstract). The stack in the reference comprises in succession a high index first layer, having a refractive index of 1.9 and a geometrical thickness of 18 nm; a low index second layer having a refractive index of 1.45 and a geometrical thickness of 35 nm; a high index third layer having a refractive index of 2.2 and a geometrical thickness of 120 nm; and a low index fourth layer having a refractive index of 1.45 and a geometrical thickness of 85 nm (see page 17, lines 5-15). It is further disclosed by Boire that the high index first layer and/or high index third layer are based on one or more metal oxides selected from tin oxide, zinc oxide, zirconium oxide, or titanium oxide (see page 6, lines 1-2), as recited in claims 31 and 32. The low index second layer and/or low index fourth layer in the reference may be based on silicon oxide, silicon oxynitride and/or oxycarbide, or on a mixed silicon aluminum oxide (see page 6, lines 13-24), as recited in claim 34. The substrate used in the reference may be clear or bulk-tinted glass (see page 8, lines 3-13), as recited in claim 35. The other face of the substrate in the reference is also coated with a multilayer antireflection stack (see page 16, line 38 through page 17, line 7), as recited in claim 39. It is also disclosed by Boire that the substrate

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may have a laminated structure in which two glass substrates are joined together using a sheet of thermoplastic, the substrate being provided, on the opposite side to the join, with the antireflection stack and the substrate being provided, on the opposite side of the join, with an antireflection stack. The antireflection stack or stacks in the reference are also deposited by sputtering (see page 17, lines 5-7). It is also disclosed in the reference that the glazing may be used as interior or exterior glazing for buildings, a shop display counter, vehicle windows, etc. (see page 1, lines 21-26).

7. Claims 23-35 and 39-44 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,068,914 (Boire et al.).

Boire discloses a transparent substrate comprising on at least one face of the substrate, an antireflection coating, made of a stack of thin layers of dielectric material having alternately high and low refractive indices (see column 9, lines 57-67). The stack in the reference comprises in succession a high index first layer, having a refractive index of 1.9 and a geometrical thickness of 18 nm; a low index second layer having a refractive index of 1.45 and a geometrical thickness of 35 nm; a high index third layer having a refractive index of 2.2 and a geometrical thickness of 120 nm; and a low index fourth layer having a refractive index of 1.45 and a geometrical thickness of 85 nm (see column 11, lines 1-8). It is further disclosed by Boire that the high index first layer and/or high index third layer are based on one or more metal oxides selected from tin oxide, zinc oxide, zirconium oxide, or titanium oxide (see column 4, lines 10-13), as recited in claims 31 and 32. The low index second layer and/or low index fourth layer in the reference may be based on silicon oxide, silicon oxynitride and/or oxycarbide, or on a mixed silicon aluminum oxide (see column 4, lines 41-49), as recited in claim 34. The substrate used in the

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reference may be clear or bulk-tinted glass (see column 5, lines 18-27), as recited in claim 35. The other face of the substrate in the reference is also coated with a multilayer antireflection stack (see column 10, lines 53-67), as recited in claim 39. It is also disclosed by Boire that the substrate may have a laminated structure in which two glass substrates are joined together using a sheet of thermoplastic, the substrate being provided, on the opposite side to the join, with the antireflection stack and the substrate being provided, on the opposite side of the join, with an antireflection stack. The antireflection stack or stacks in the reference are also deposited by sputtering (see column 10, lines 65-67). It is also disclosed in the reference that the glazing may be used as interior or exterior glazing for buildings, a shop display counter, vehicle windows, etc. (see column 1, lines 21-63).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 97/43224 (Boire et al.).

Boire discloses a transparent substrate as shown above in paragraph number 6. The reference only discloses the light reflection or a^* and b^* values at normal incidence (see page 3 17, lines 8-31) rather than an angle of incidence between 50° and 70° ; however, absent a showing

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of criticality, it would have been obvious to one having ordinary skill in the art to determine such properties.

10. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,068,914 (Boire et al.).

Boire discloses a transparent substrate as shown above in paragraph number 7. The reference only discloses the light reflection or a^* and b^* values at normal incidence (see column 11, lines 1-30) rather than an angle of incidence between 50° and 70° ; however, absent a showing of criticality, it would have been obvious to one having ordinary skill in the art to determine such properties.

Allowable Subject Matter

11. Claim 38 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not disclose or suggest a transparent substrate comprising an antireflection coating made of thin layers of dielectric material having alternately high and low refractive indices on at least on face, wherein the stack comprises in succession a high index first layer, having a refractive index of 1.8-2.2 and a geometrical thickness of 5-50 nm; a low index second layer having a refractive index of 1.35-1.65 and a geometrical thickness of 5-50 nm; a high index third layer having a refractive index of 1.8-2.2 and a geometrical thickness of 70-120 nm; and a low index fourth layer having a refractive index of 1.35-1.65 and a geometrical

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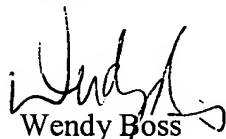
thickness of at least 85 nm, and further wherein the stack uses as its high index third layer silicon nitride or aluminum nitride.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wendy Boss whose telephone number is 571-272-1534. The examiner can normally be reached on M-Th 8:30a-6:00p; 2nd F 8:30a-5:00p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Wendy Boss